

**ABSTRACT**

Hydrazino, oxyamino and carbonyl-based monomers and methods for incorporation into oligonucleotides during enzymatic synthesis are provided. Modified oligonucleotides are provided that incorporate the  
5 monomers provided herein. Immobilized oligonucleotides and oligonucleotide conjugates that contain covalent hydrazone or oxime linkages are provided. Methods for preparation of surface bound oligonucleotides are provided. Methods for the preparation of oligonucleotide conjugates are also provided.